easily brought about, however, if physicians, through collective and individual effort, will pay attention to certain matters.

Doctors of Medicine too often forget their civic responsibilities. In days gone by, under conditions much different from those of the present, such forgetfulness may have been permissible. But, now, no more. Today the preservation of scientific medicine and standards—and if that be not enough, the instinct of self-preservation, to guard a system of medical practice that will give the best quality of service to patients, and will permit physicians to live according to standards necessary in the profession of medicine—points the way of action for physicians.

How, then, can the joint interests of organized and scientific medicine be best protected? The answer is found in the plan of giving some time at almost every meeting to topics concerned with organized medicine; or if that procedure is not preferred, then by having one, two, or more meetings at which the problems of organized medicine are the major feature.

Among procedures worthy of consideration along this line may be mentioned:

A conjoint meeting, at which members of one or more of the following professions could be invited: medicine, dentistry, law, pharmacy, and nursing; with a program dealing with matters of more or less mutual interest. At such a meeting it would be both a gracious courtesy and a matter of diplomacy to invite as guests the local Senator and Assemblymen, introducing and thanking them for their past coöperation.

The Basic Science Initiative is now before the electorate, and will be submitted at the next state election. The passage of such a law will safeguard healing-art standards in California for years to come, and the aid of every physician and of friends will be needed to put this measure on the statute books. Many questions will be asked by interested patients and other persons. A meeting devoted to this subject will be time well spent.

Medical Service Plans, too, and California Physicians' Service are other subjects worthy of serious thought and discussion. The whys and wherefores of these new plans for meeting current-day inadequacies in medical care should be understood by physicians, especially since laymen are giving much thought thereto. The true facts must be imparted by members of the medical profession if the voters are not to be led astray.

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The above are a few of the matters to which officers and committees of county societies should give consideration. Keep in mind that in such work the Central Office, 450 Sutter, San Francisco, at all times is at the service of members.

Other State Association and Component County Society News.—Additional news concerning the activities and work of the California Medical Association and its component county medical societies is printed in this issue, commencing on page 141.

EDITORIAL COMMENT†

ISOLATION OF BLOOD GROUP O SPECIFIC CARBOHYDRATE

According to current clinical logic, Group O human red blood cells are characterized by the absence of A- and B-group agglutinogens rather than by the presence of a positive O-specific antigenic factor. Marked revisions in conventional, clinical logic, therefore, may follow the isolation of O specific haptenes from the gastric juice of patients belonging to the O blood group, which is currently reported by Witebsky and Klendshoj [1] of Buffalo General Hospital, and from the simultaneous demonstration of specific anti-O agglutinins in type A human blood, by Dockeray and Sachs [2] of Trinity College, Dublin.

The specific antigen of type A human blood was detected by earlier investigators [3] in the urine, saliva and gastric contents of group A patients. The "A" substance was first isolated from horse saliva by Landsteiner [4] and shown by him to be a carbohydrate. By a modification of the Landsteiner technic "A" erythrocarbohydrate was afterwards isolated in relatively large amounts from certain commercial peptones,[5] and subsequently shown by Witebsky [6] and his coworkers to be of therapeutic interest. Witebsky found that human O bloods can be completely detoxicated for A recipients by the addition of a few milligrams of "A" carbohydrate. Theoretically, this detoxication is effected by neutralization of the anti-A agglutinins and hemolysins often present in toxic titers in O bloods. Witebsky [7] afterwards showed that "B" erythrocarbohydrate could be successfully isolated from the pooled gastric juice of B patients, and that this specific carbohydrate will completely neutralize B agglutinins in dilutions as high as 1:2,000,000. Therapeutic tests of "B" erythrocarbohydrate, however, have not yet been reported.

Evidence of the existence of a third antigenic component specific for O corpuscles was first obtained from a study of the anti-human agglutinins in animal serums. Normal beef serum [8] and anti-Shiga goat serum [9] both will agglutinate human red blood corpuscles of all types. The A-, B- and AB-agglutinins can be absorbed from such serums

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† This department of CALIFORNIA AND WESTERN MEDICINE presents editorial comments by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California Medical Association to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

1 Witebsky, Ernest, and Klendshoj, Niels C.: Jour. Exper. Med., 75:655 (May), 1941.

2 Dockeray, G. G., and Sachs, H.: Jour. Path. and Bact., 52:203 (March), 1941.

3 Brahm, B., and Schiff, F.: Klin. Woch., 5:1455, 1926; 8:5239, 1929; 11:1592, 1932.

4 Landsteiner, K.: Science, 76:351, 1932; Jour. Exper. Med., 63:185, 1936.

5 Goebel, Walter, F.: Jour. Exper. Med., 68:221, 1938.

6 Witebsky, S., Klendshoj, N., and Swanson, P.: Jour. Infect. Dis., 67:188 (Nov. and Dec.), 1940.

7 Witebsky, Ernest, and Klendshoj, Niels C.: Jour. Exper. Med., 72:663 (Dec.), 1940.

8 Greenfield, Gregor: Zeitschr. f. Immunitätsforsch., 56: 107, 1928.

9 Eisler, M.: Zeitschr. f. Immunitätsforsch, 67:39, 1930.

with little reduction in the anti-O titer. Applying such reduced animal serums to clinical cases, Schiff [10] demonstrated the presence of relatively large amounts of O-haptene in the saliva and gastric juice of patients belonging to blood group O. Witebsky currently reports its successful isolation, the substance also being a specific carbohydrate capable of inhibiting the agglutination of human O corpuscles by human isoagglutinins or animal anti-O reagins. Confirming previous clinical experience with "A" and "B" carbohydrates, Witebsky found a wide variation in the amounts of "O" carbohydrate secreted in the gastric juice of different "O" patients, about 25 per cent of them being apparently "nonsecretors." From these nonsecretors, however, a fourth, apparently nonantigenic carbohydrate was isolated, which is immunologically inert when tested against both human and animal hemagglutinins.

That the Witebsky "O" carbohydrate is autoantigenic, is currently reported by the Irish investigators,[2] who found one group A patient whose blood contained relatively large amounts of anti-O agglutinin. This patient's blood was also self-agglutinating, presumably due to the presence of O haptene in the patient's own group A corpuscles. Dahr [11] had previously shown that significant amounts of "O" carbohydrate are also present in Group A erythrocytes.

Attempts to determine the exact chemical nature and interrelationship of the "A," "B" and "O" cytocarbohydrates are now in progress in numerous laboratories. Until this is accomplished, speculative theories of human blood relationships will be of ephemeral, biological and clinical interest. It is evident, however, that a purely negative rôle can no longer be assigned to human O-group erythrocytes.

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MORE CONCERNING RHEUMATIC HEART DISEASE

II*

The truly dangerous medico-social problems of this age do not advertise themselves and clamor for solution. Like the iceberg, they give only a hint of their true dimensions. The control of such problems waits on the tedious and difficult work of determining their exact nature and extent.

Rheumatic heart disease appears to be such a problem. Statistical studies made in various sections of the country give some indication of the great numbers of children affected by the disease. These studies correspond to the small, visible portion of the iceberg. What lies beneath the surface?

Without doubt there are a large number of children with rheumatic infections who are not included in any statistical studies, and who have not reached the attention of physicians. Rheumatic infection may exist completely unrecognized for years. Insurance and other health examinations have revealed rheumatic heart disease in adults who were completely unaware that they had ever had rheumatic fever. The problem is further complicated by the fact that, owing to its protean clinical manifestations, rheumatic fever may be extremely difficult to recognize. Hedley says "The disease tends to become a smoldering low-grade infection, with periods of reactivation or recrudescences."

Ethel Cohen says: "For some children, several examinations in the clinic will be needed. When the diagnostic problem is more difficult, hospital care will be required for close observation, for additional laboratory tests, and often for the opinion of other consultants. A correct diagnosis is of the utmost importance. Years of invalidism for children, and worry and financial strain for their families, can be prevented if the fact can be established that no disease exists."

To make this disease reportable is only a step in the long preventive campaign, but it is a step which must be taken before any real progress can be made. The hidden cases must be uncovered—and we can assume that there are many hidden cases and that they will be difficult to detect.

Then, and only then, can we apply the medical and administrative techniques, which have so successfully brought tuberculosis under control, to this disease which is recognized as one of the most serious problems of national health today.

University of California Hospital.

AMOS CHRISTIE,
San Francisco.

CAUSE OF DEATH IN CORONARY THROMBOSIS

Coronary thrombosis is recognized as a sufficient and valid cause of death by vital statisticians, but in reality it is not per se a cause of death. At any rate, it does not by itself explain the modus operandi of the termination of life.

Following myocardial infarction, death may follow directly from five distinct conditions, each a direct result of the infarction: Shock; ventricular fibrillation; acute heart failure (acute dilatation); embolism, following mural thrombi; or cardiac rupture.

Shock is distinctly an early phenomenon in coronary thrombosis. In some instances, practically no shock is present, in others it is very severe, probably varying with the size of the infarct. As in surgical shock, the patient either dies or recovers from it in a short time, usually a matter of a few hours or at most a day or two.

Ventricular fibrillation is one of the most, if not the most dreaded condition complicating cononary thrombosis, since it is incompatible with life for more than a very few minutes at most, and since there is practically no treatment for it after it devel-

10 Schiff, F.: Zeitschr. f. Immunitätsforsch., 82:302, 1934.
11 Dahr, Peter: Zeitschr. f. Immunitätsforsch., 92:180, 1938.

* For Article I of this series, see August issue, on page 58.